

## REMARKS

Applicant thanks the Examiner for the very thorough consideration given the present application. Claims 1-12, 14-20, and 22-25 are now pending in the application. Claims 4, 12, and 17 stand withdrawn from consideration. Claim 13 was previously cancelled, and claim 21 has been cancelled herein. Claims 1-3, 5-11, 14-16, 18-20, and 22-25 stand rejected. The Examiner is respectfully requested to reconsider and withdraw the rejections in view of the amendments and remarks contained herein.

### REJECTION UNDER 35 U.S.C. § 103

Claims 1-3, 5-11, 14-16, 18-20, and 22-25 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over either Winfree et al. (U.S. Pat. No. 6,439,503) or Bussing et al. (U.S. Pat. No. 5,873,240) in view of Shann (U.S. Pat. No. 4,391,195). These rejections are respectfully traversed.

As currently amended, claim 1 calls for "an optical transport subsystem for transporting the optical pulses from the optical ignition subsystem to the chambers in a repeated fashion." As currently amended, claim 10 calls for an optical ignition subsystem which includes "an optical transport subsystem for transporting the optical energy from the optical multiplexing apparatus to the chambers in a repeated fashion." As currently amended, claim 14 calls for a method for detonating a pulse detonation wave engine which includes transporting optical pulses to the chambers "in a repeated fashion."

The examiner will appreciate that the feature of "repeated detonation" is an inherent characteristic of a detonation system for the type of engine related to this

application and is therefore not new matter. If the examiner believes an additional sentence in the specification is needed for literal support, applicant would be willing to amend the specification accordingly.

Neither the Winfree et al. reference nor the Bussing et al. reference discloses an optical transport subsystem for transporting optical pulses as is called for in claims 1, 10, and 14. The references do not disclose "a laser subsystem for distributing the laser energy to the chambers." Page 2, paragraph 3, line 3 of the Office Action mailed May 5, 2004.

The Shann reference does not disclose an optical transport subsystem for transporting optical pulses as called for in claims 1, 10, and 14. The Shann reference relates to the "detonation of explosive charges" and provides "a system for connection of a set of explosive charges with a laser for detonation thereby" (Column 1, lines 5-8). However, the Shann reference does not provide a system for detonation that can be operated in a repeated fashion. The Shann reference discloses that "[t]he detonation of the charges damages the lengths of fibre terminating at the detonators" (Column 5, lines 3-4). Such a system destroys portions of the fibers at detonation. Thus, the structure disclosed in the Shann reference could not possibly be used in a pulse detonation wave engine. Such an engine requires repeated detonation cycles for each of the chambers and banks. Furthermore, it is respectfully submitted that one skilled in the art would never look to the teachings of the Shann reference in attempting to construct an optical transport subsystem for detonating a pulse detonation wave engine recited in claims 1, 10, and 14. Accordingly, the references alone or in combination fail

to teach or suggest all of the features of claims 1, 10, and 14. Therefore, reconsideration and withdrawal of these rejections are respectfully requested.

Claims 2-3 and 5-9 depend directly or indirectly from claim 1, and therefore, for at least the reasons stated above with respect to claim 1, are believed to be patentable. Claims 11, 19, 20, and 22-25 depend directly or indirectly from claim 10, and therefore, for at least the reasons stated above with respect to claim 10, are also believed to be patentable. Claim 11 is currently amended in view of currently amended claim 10. Claim 21 has been cancelled. Claim 22 is currently amended to depend from claim 10, and claim 23 is currently amended to correct a clerical error. Claims 15, 16, and 18 depend directly or indirectly from claim 14, and therefore, for at least the reasons stated above with respect to claim 14, should also be in allowable form. Accordingly, withdrawal of the instant rejections is requested.

#### **CONCLUSION**

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the

Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

Dated:

July 23, 2004

By:

Mark D. Elchuk  
Mark D. Elchuk  
Reg. No. 33,686

HARNESS, DICKEY & PIERCE, P.L.C.  
P.O. Box 828  
Bloomfield Hills, Michigan 48303  
(248) 641-1600

MDE/DWH